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ABSTRACT

A study examined the relationship between the degree of a principal's instructional leadership and student achievement. Methodology involved regression analysis of the Basic Skills Assessment Program (BSAP) scores of over 7,400 eighth-graders in 104 schools in Mississippi. Questionnaires were also mailed to 104 principals, yielding a response rate of 69 percent. Findings indicated that the degree to which the principal demonstrated instructional leadership had no effect on student achievement scores. However, the findings do not contradict effective schools research because the principal's rating was based on the amount of time spent on duties directly related to instructional leadership. A principal's knowledge of what is going on in the classroom and an understanding of instruction are also important elements of instructional leadership. The principal questionnaire is included in the appendix. (14 references) (LMI)

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A Study of Student Achievement and How It Relates to the Principal in the Role of Instructional Leader

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Abstract

Since the early days education there have been many evolutions in the role of the principal. Effective schools research has encouraged a shift in the role of the principal from managerial head to instructional leader. Recent literature defines instructional leader and suggests that in the presence of a principal acting in this role an increase in student achievement can be expected. This study was to determine if there were a higher performance by students in schools with principals in this role as instructional leader than by students in schools with principals not fulfilling this role. A questionnaire designed to show whether the principal demonstrated instructional leadership was sent to 104 systematically selected schools having eighth grades in Mississippi. Each responding principal included information that was used to classify the questionnaires into three groups representing the degree to which the principal fulfilled the role of instructional leader. For the three groups of schools, the mean BSAP scores were compared to determine if differences were consistent with expectations founded on effective schools research.

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Student Achievement and How it Relates to the Principal as Instructional Leader

Researchers have studied the concept of school effectiveness and its determinants since the early days of one-room schools and head teachers who served in the role of the principal. The traditional research which was begun many years ago concluded that schools had no effect on student achievement. Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, and York (1966) in the government report Equality of Educational Opportunity found that schools did not make a difference in verbal achievement of students since an extremely small proportion of student achievement was found to be due to school characteristics. Jencks (1972) found that the variance in student achievement was not related to the resources going into schools (between schools) but due to factors within the schools. He suggested that it would be important to find how schools treat students differently.

One criticism with these traditional input-output studies was that the resources measured by these studies may not be the ones that really make a difference in student achievement (Spady, 1973). This and other

similar criticisms lead to a wave of studies to document the influence processes that do work within the schools which make some schools more effective than others. These studies examined directly the processes and resources that affect students' experiences in schools. These "effective schools" studies began to take a look at the within school processes and resources that affected student outcomes.

"Effective schools" research consisting of comparisons of effective and ineffective schools has made it possible to identify specific factors within the schools which promote higher student achievement. These school-level factors include (a) a school climate conducive to learning, (b) emphasis on basic skills instruction, (c) teachers who hold high expectations for all students to achieve, (d) a system of clear instructional objectives for monitoring and assessing student performance, and (e) a school principal who is an instructional leader (Brookover, Beamer, Efthim, Hathaway, Lezotte, Miller, Joseph Passalacqua & Tornatzky, 1982).

The purpose of this study was to focus on one of the effective school correlates found in the effective

schools research--the school principal as an instructional leader--and to investigate the relationship of the degree to which the principal demonstrates the role of instructional leader and eighth-grade student achievement on the Basic Skills Assessment Program (BSAP). An effort was made to determine whether there was a significant difference between student achievement in schools with differing degrees of demonstrated instructional leadership by the principal. Another question of interest was whether the demonstration of instructional leadership on the part of the principal was a predictor of student achievement. The composite (CP), reading (RD), mathematics (MA) and written communication (WC) scores were used to make these determinations.

Two sets of null hypotheses were tested:

1. There will be no statistically significant difference in mean student achievement scores (CP, RD, MA or WC tested separately) on the BSAP earned by eighth-grade students in schools where there are differing degrees of demonstration of instructional leadership by the principal.

2. The degree to which the principal demonstrates that he acts in the role of the instructional leader is

not a predictor of student achievement scores (CP, RD, MA or WC tested separately) earned by eighth-grade students on the BSAP.

It was assumed that the eighth-grade students represented in the sample were representative of all other eighth-grade students in the state of Mississippi. It was further assumed that the BSAP is a valid, reliable test and scores on it are indicative of students' knowledge of the basic skills.

As researchers have shown, there are many factors which affect student achievement scores. Some of these may include socioeconomic background and other factors of ethnicity, but the only hypotheses tested in this study related to the principal's behavior in the role of instructional leader.

The instructional leader, as defined by Lovell and Wiles (1983) is the one who coordinates the efforts to define and evaluate local school goals; plans, implements and evaluates instructional programs to achieve those goals; attracts, selects, and facilitates the professional growth of staff members; evaluates and coordinates the work of professional personnel; and sees that adequate and appropriate instructional materials,

equipment and facilities are provided. The principal who acts as an instructional leader puts the activities related to the supervision of the instructional program high on his list of priorities demonstrated by how must time is spent on these activities (Regan, 1988).

Related Literature

All of the effective schools literature had the underlying, if not specific, implication that the role of the principal must change. Keefe (1987) explained that the expectation of the principals as instructional leaders extends the management function beyond the commonplace operations of the school to the leader of the instructional program.

Litchfield (1986) expressed his belief that principals should perform the role of instructional leadership. However, prior to attending a conference held by the Far West Laboratories he thought this role involved classroom observations, holding pre- and post-observation conferences with teachers, and conferencing with staff about long-range curriculum goals. Far West Laboratories studies, according to Litchfield, have indicated that the principal does not have to spend large blocks of time in the classroom observing. This is more

consistent with the realities of the job of the principal. Definition of instructional leader must be expanded to include principals who leave instruction in the expert hands of their teachers, who guarantee that the school climate remains conducive to instruction and who meet the social needs of the students.

Deal and Kennedy's (1982) leadership pyramid for schools indicates that there are layers of responsibility: (a) managerial, (b) instructional leadership, (c) symbolic leadership, and (d) cultural leadership. Principals must establish credibility at each level before moving on to the next. Instructional leadership level is where the greatest impact on teaching occurs. When principals have established themselves on these two lower levels of the pyramid, then they will be able to become effective on the two higher levels as symbolic and cultural leaders. Principals on the highest levels of culture can then establish a clear mission for their school. Classroom visitations, refusing to use the intercom to interrupt classes, reporting to parents about student progress, appearing daily in the cafeteria and halls convey message are all indicators of effective instructional leadership. After this, the principal can

establish a culture that transforms the school into a learning society.

Principals do not have to spend the majority of time with teachers and students (Keefe, 1987). Instructional leadership includes (a) formative knowledge and daily reading and self-improvement, (b) planning and helping teachers organize for instruction, (c) implementation activities for enhancing the quality of teaching and learning and (d) evaluation of test results.

Dwyer's (1983) case study of Frances Hedges and instructional leadership found her effectiveness to be in a child-centered approach to education, emphasizing caring and nurturing. It was clear that the principal's use of routine activities directly influenced and shaped the content and nature of instruction in the school as well as the climate in which teaching and learning took place. Frances Hedges regularly involved herself in matters related to teaching and learning, worked supportively with staff and built consensus around goals and priorities.

Trump (1987) found that higher achievement occurred in schools than might be expected where the principal provided strong instructional leadership.

Ginsberg (1988) agreed with the importance that the effective schools literature was placing on the instructional leader, but implied the need for a more specific definition of the process. He suggested that the principalship as presently designed and organized was not the likely place to see it actualized. Altered training programs and selection programs to emphasize skills identified as important for the task were needed.

Dwyer (1983) asked the question, "If principals do what is considered effective by the effective schools research, then what do they do to maintain these conditions?" Principals were studied using shadowing and interviewing techniques over a period of one year. He developed the following list of common behavior categories: principals act with purpose, have a multi-faceted image of schools, use routine behaviors to progress incrementally toward their goals, engage in the same kinds of behavior, but routines vary to suit their contexts and purposes.

Andrews and Soder (1987) maintained that principals command the leading role. The principal is critical in ensuring academic achievement, especially for black and low-income students.

Methodology

A sample of 104 schools containing eighth grades was systematically chosen from the 303 available schools containing eighth grades in the state of Mississippi. The location of these schools was plotted on a statewide map to ensure that all geographical regions were represented.

The instrument used to measure student achievement was the BSAP which is a criterion referenced test given to all eighth-grade students in Mississippi to test knowledge of basic skills. This ex post facto design incorporated BSAP scores obtained during the spring of the 1991 school year. The scores were made up of three subtests--reading (RD), mathematics (MA), and written communication (WC)--and a composite score (CP). A copy of the statewide testing program results which was used as the source for the mean test scores for each of the eighth grades in the state plus demographic information such as free lunch participation which was used as a proxy variable to indicate socioeconomic status (SES) of the school population, race (RA) represented by the number of blacks divided by the total eighth-grade population, and gender (GN).

To measure the degree to which the principal demonstrated instructional leadership a questionnaire for principals was designed with items covering activities which, according to the effective schools research, were descriptive of the role of an instructional leader s were mailed to the 104 principals representing the eight. In June of 1991 these questionnaires were mailed to the 104 principals representing the selected eighth grades. After extensive follow-up, the response was 69.2%. A copy of the questionnaire is included in Appendix A.

The following procedure was used to organize the questionnaire into low, middle and high groups representing the degree to which the principal acted out the role of instructional leader. The percentage of time spent on activities specifically identified as instructional leadership activities was calculated for each principal. The questionnaires were then ranked in ascending order by the amount of time spent on instructional leadership activities. The questionnaires were divided into three groups according to their ranks (low/middle/high), and this rank was assigned to the corresponding principal's questionnaire. Other questions on the questionnaire served as supporting information in

situations where a rank could not be assigned using the pre-selected questions. Nearly equal numbers of schools were assigned to each group.

The data was analyzed using analysis of variance and regression analysis. The decision was made to reject a null hypothesis if the p value of the test statistic was equal to or less than .05. A correlation matrix was calculated to determine the relationships of the variables to each other.

Results

Four analyses of variance comparing the three levels of principals groups (PG) with CP, RD, MA and WC each done separately to test the null hypotheses that there were no significant differences in student achievement due to differences in degree of principal instructional leadership resulted in no significant differences being found. In fact, the p values can be found in Table 1.

Table 1

Analysis of Variance

	F value	p value
CP by PR	.1455(2, 59)	.8649
RD by PR	.1677(2, 59)	.8460
MA by PR	1.1196(2, 59)	.3332
WC by PR	.5499(2, 59)	.5800

Table 2

Achievement Means by Group Degree of Instructional Leadership

	Principal Groups (PG)		
	Low	Middle	High
CP	874.30	874.13	875.02
RD	872.50	872.39	873.4
MA	873.42	873.10	879.04
WC	878.79	878.63	879.90

N = 62

Based on these results, the null hypotheses in the first set regarding the differences between the three levels of PG and the effect on student achievement (CP, RD, MA and WC) were not rejected (Table 2).

The regression analyses were run and the correlations were calculated using the percentage of amount of time spent doing instructional leadership activities (PR). The percentages ranged from 10% to 91%.

The correlation matrix showed a very low correlation between PR and CP (.03) indicating an insignificant relationship (Table 3). Insignificant relationships were also found between PR and RD (.08), PR and MA (.05) and PR and WC (.05). Significant relationships were found between RA and RD (-.68), RA and WC (-.60) and RA and CP (-.65). The correlation between RA and MA (-.19) was

insignificant. GN had no significant correlations with any other variables.

Table 3

Correlation Coefficients

	PR	RA	GN	SES	RD	MA	WC	CP
PR	1.00							
RA	.27*	1.00						
GN	.03	-.05	1.00					
SES	.03	.56*	-.10	1.00				
RD	.08	-.68*	-.03	-.55*	1.00			
MA	.05	-.19	.05	-.09	.22	1.00		
WC	.05	-.60*	-.03	-.57*	.88*	.31*	1.00	
CP	.03	-.65*	.01	-.55*	.93*	.37*	.91	1.00

Using the regression analysis entering PR with CP as the dependent variable yielded an Rsq of .00081 which accounted for less than .1% of the total variance in student achievement CP. Using a stepwise regression method using CP as the dependent variable, RA was entered first accounting for 42% of the variance (Rsq = .42457). SES entered the equation second creating about 5% change in the Rsq raising it to .47565. PR was never entered into the equation in this process. A commonality analysis would indicate that the uniqueness of the proportion of variance due to PR on CP would still be negligible. Based on these results, the null hypothesis

that PR served as a predictor of CP was not rejected.

Further regression analyses were run to determine the effect of the PR on RD, MA and WC. Similar results were found when using these other three dependent variables. The amount of variance in achievement attributed to the degree of instructional leadership in each case (RD Rsq = .007, MA Rsq = .002, WC Rsq = .002) amounted to less than 1% of the total variance. Based on these findings, the null hypotheses stating that the principal rating was a predictor of RD, MA or WC were not rejected.

Conclusions

The results of this study indicate that the degree to which the principal demonstrates instructional leadership has no effect upon student achievement scores including CP, RD, MA and WC. However, RA and SES were found to be significant predictors of student achievement in all areas except MA. The reason for this could be that mathematics is recognized in literature as being more of an in-school learned variable than reading and other verbal areas (Coleman et al.,1966).

Even though the findings with respect to the effect of instructional leadership by the principal in this

study seem to contradict most of the effective schools research, this is actually not the case. There is still some disagreement among effective schools researchers as to the importance of the amount of time spent with teachers and students in the classroom. Without question, the role of the principal of instructional leader is recognized as very critical to the planning, implementation and supervision of a curriculum of instruction. Since the rating of the principal's questionnaire was based on the amount of time actually spent on duties directly related to instructional leadership, perhaps it is true that the amount of time spent is not so crucial as the principal's performing his/her routine duties with knowledge of what is going on in the classroom and understanding of instruction all of which shape and have an impact on the instructional program. Perhaps Litchfield (1986) was correct in saying that reducing the role of instructional leadership to the amount of time spent in the classroom would be an oversimplification of the problem.

Further investigation is recommended into the area of student achievement and its relationship to the role of the principal. First, however, a clearer definition

of the role of instructional leader and the activities which indicate instructional leadership are needed. Effective leadership cannot effectively be measured until it is known specifically what effective leadership is. David Dwyer's case study approach of shadowing and interviewing over a period of time with the principals with higher achievement scores would be a good follow-up.

This study represented the scores of over 7,400 students. Further studies with specific student scores incorporated into a different methodology using the multilevel approach to include not only scores but specific policies and organizational features which produce effective schools is also recommended. According to Raudenbush and Bryk (1989) it creates confusion not to include the process which actually generates the data.

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Principal Questionnaire

1. What percentage of your time each week do you spend doing the responsibilities listed below?

a. faculty meetings/staff development ___%
b. student discipline ___% g. admin. paperwork ___%
c. classrom visitation___% h. teacher conference___%
d. parent conference ___% i. self-improvement ___%
e. after-school func. ___% j. teacher eval. ___%

Using the same list, please answer the following.

2. List in order of priority the three responsibilities listed that you feel have the greatest priority in your position as principal.

1._____2._____3._____

3. In which responsibility would you way you are most competent?_____

4. In which responsibility do you feel additional training would be most beneficial?_____

5. Which responsibility do your teachers think should be most important for you as their principal?_____

6. Which responsibility do you think should be your most important function?_____

7. In which responsibility could your increased effort lead to increased instructional time for the teachers?_____

For the following questions, please circle your choice. If there is more than one answer, please circle them.

8. When there is a curricular/instructional decision to be made, who makes it?

principal, teachers, central office, students, counselors

9. Which is more important for a principal?

a. the task to be completed
b. the feelings of the people completing the task

10. What is your preferred way of communicating to the staff?

intercom, memo, faculty meeting, individual conference, department head, informal chat in hall, other _____

11. Would your secretary say that you are organized?
yes no

12 To whom do you owe responsibility as principal?

central ofc, parents, students, faculty, community

13. Would your staff say that you are supportive of them?

yes no

14. What trends have your BSAP scores shown over the last three years?

increase, decrease, no change

15. Can all children learn? yes no

Please write brief answers.

16. What is your long-range goal for your school?

17. How have you communicated this goal to staff? students? community?

18. Describe your expectations of teachers? of students?

19. How do you monitor student progress through the year?